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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/017,632	12/14/2001	Jonathan F. Hester	56754/US002	6407
32692	7590	11/05/2003	EXAMINER	
3M INNOVATIVE PROPERTIES COMPANY			VO. HAI	
PO BOX 33427			ART UNIT	
ST. PAUL, MN 55133-3427			PAPER NUMBER	
			1771	

DATE MAILED: 11/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/017,632	HESTER ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Hai Vo	1771	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08/11/2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 29-54 is/are pending in the application.
- 4a) Of the above claim(s) 37 and 43-53 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 29-36, 38-42 and 54 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \*   c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                  | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____  |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)         | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____                                    |

***Election/Restrictions***

1. Applicant's election with traverse of Group I, claims 29-36, 38-42 and 54 in the amendment received on 08/15/2003 is acknowledged. The traversal is on the ground(s) that the inventions of all claim three groups are so closely related in the field of wastewater treatment that a proper search of any of the claim groups would require a search of the others. This is not found persuasive because a search of Group I would not include the search for Groups II and III.

The requirement is still deemed proper and is therefore made FINAL.

2. As suggested by the examiner in the interview held on August 05, 2003, Applicants are reminded of their right to request rejoinder of method claims with the product claims upon indication of the product claims as being allowable. See *In re Ochiai*, 37 USPQ2d 1127.
3. The indicated allowability of claim 33 is withdrawn in view of the newly discovered reference(s) to Insley (US 6,514,412). Rejections based on the newly cited reference(s) follow.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 29-31, 33, 36 and 54 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over WO 99/65595 to Insley. Insley discloses a fluid separation device comprising at least one gas permeable, water impermeable membrane 62 and a gas delivery layer 57 being adjacent to the gas permeable, water impermeable membrane 62. The gas delivery layer 57 comprises a plurality of walls 61 forming a plurality of flow channels 59 (figures 2 and 4). Insley teaches the membrane 62 being laminated to a layer of woven or non-woven web (figure 4). This reads on Applicants microbial support layer proximate to the membrane 62. Figure 6 shows that there are micro-channels in the base that extend the length of the flow channels. Insley discloses the membrane 62 being used for gas-liquid, liquid-liquid separation. Likewise, the gas inherently flows through from the channels of the gas delivery layer 57 to the membrane 62. It is the examiner's position that Insley either expressly or inherently anticipates or would be an obvious optimization of the claimed subject matter.
7. Claims 32 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/65595 to Insley as applied to claim 29 above, in view of Cote et al

(US 6,558,549). Insley does not specifically disclose or suggest the fluid separation device comprising the gas delivery layer interposed between the two gas permeable layers. Cote teaches a membrane module comprising the gas delivery layer interposed between the two gas permeable layers (figure 2).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to dispose the gas delivery layer between the two gas impermeable layers motivated by the desire to provide the structural stability of the device.

Insley does not specifically that the device is wound into a helix. Figure 11 of Cote shows that the apparatus is wound into a helix. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to wind the fluid separation device into a helix because such is a typical form of the fluid separation device and Cote provides necessary details to practice the invention of Insley.

8. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/65595 to Insley as applied to claim 29 above, in view of Rinker et al (US 4,333,779). Insley does not specifically disclose or suggest the microporous membrane 62 having a surface that is either one or both of undulated or corrugated in shape. Rinker discloses an apparatus for manufacturing a bio-oxidation and nitrification module useful in treating sewage comprising alternating flat sheets and corrugated sheets to provide a large surface area upon which micro-organism can grow and further avoid straight "fall through" of the waste

water through the module (abstract, column 1, lines 11-15, 36-42). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use a microporous membrane having a corrugated surface motivated by the desire to provide a large surface area upon which micro-organism can grow and further avoid straight "fall through" of the waste water through the apparatus.

9. Claims 38, 39 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/65595 to Insley in view of Mrozinski et al (US 5,989,698). Insley teaches each and every element of the claimed subject matter except the coating of a fluorochemical provided on the surface of the gas permeable, water impermeable membrane 62. Mrozinski teaches a coating for the porous material containing fluorocarbon urethane precursors to provide improved olephobicity (abstract). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a coating of fluorourethane coating on the surface of the gas permeable, water impermeable membrane motivated by the desire to provide improved olephobicity.
10. Claims 40 and 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 99/65595 to Insley in view of Mrozinski et al (US 5,989,698), as evidenced by McDermott et al (US 6,068,771). Insley does not specifically disclose the gas delivery layer is a foam material or a fabric material. McDermott is relied on as evidence that teaches the gas delivery layer made of a foam material or a fabric material (column 4, lines 35-40). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was

made to employ a foam material or a fabric material as the gas delivery layer of Insley because such is intended use of the material and McDermott provides necessary details to practice the invention of Insley/ Mrozinski.

11. Claims 38-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cote et al (US 6,558,549) in view of Mrozinski et al (US 5,989,698). Cote discloses a membrane module comprising at least one gas permeable, water impermeable membrane 12 and a gas delivery layer 14 proximate the gas permeable, water impermeable membrane 12 (figures 1 and 2). The gas delivery layer 14 comprises inlet conduit 16 and an out let conduit 18 through which gas can be conveyed to the membrane 12 (column 6, lines 33-40). The membrane 12 is made of porous fabric coated with a gas permeable layer (column 6, lines 19-21). The membrane 12 can be made of microporous PTFE (column 6, lines 26-28). The membrane 112 is folded around the spacer 114 and fastened to itself with a line of stitching 122(column 8, lines 26-30). Cote discloses a spacer (gas delivery layer) 14 made of a non-woven polypropylene mesh (column 6, lines 31-33). Cote is silent as to a fluorochemical coating onto the porous membrane 12. Mrozinski teaches a coating for the porous material containing fluorocarbon urethane precursors to provide the porous material having improved olephobicity (abstract). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a coating of fluorourethane coating on the surface of the gas permeable, water impermeable membrane motivated by the desire to provide the membrane having improved olephobicity.

### ***Double Patenting***

12. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

13. Claims 29-31, 33, 36 and 54 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-19 of U.S. Patent No. 6,514,412 which is an equivalent form of WO 99/65595.

Although the conflicting claims are not identical, they are not patentably distinct from each other because of the same reasons set forth in the paragraph no. 6.

14. The art rejections in the Office Action mailed on 05/15/2003 are withdrawn in view of the present amendment and arguments.

### ***Conclusion***

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai Vo whose telephone number is (703) 605-4426. The examiner can normally be reached on M,T,Th, F, 8:30-6:00 and on alternating Wednesdays.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (703) 308-2414. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

HV

DANIEL ZIRKER  
PRIMARY EXAMINER  
GROUP ~~1300~~  
1700

*Daniel Zinker*